

Exhibit A

EXHIBIT A

Key: The **highlighted** terms are the uses of “multiprocessor” for which Ford is requesting claim construction.

U.S. Patent No. 7,146,260

Claim 9:

A multiprocessor system used in a car, comprising:

multiple processors located on-board the car and adapted to run different real-time car applications;

different communication links coupling the multiple processors together; and

a dynamic configuration system run independently on multiple different ones of the multiple on-board processors that each includes a device manager for automatically detecting and adding new hardware devices to the on-board **multiprocessor system**, a configuration manager that automatically reconfigures the **multiprocessor system** to run the real-time car applications on different ones of the multiple on-board processors, and a data manager that identifies data generated by the new devices and identifies other devices in the **multiprocessor system** that can input or output the identified data.

U.S. Patent No. 7,778,739

Claim 1:

A system having multiple on-board processors configured to operate within a vehicle, comprising:

one or more of the multiple on-board processors coupled together through multiple links into a multiprocessor network, wherein the multiprocessor network is configured to:

operate a transceiver configured to detect and establish communication between at least one processor in the **multiprocessor network** and at least one new device brought into or next to the vehicle;

selectively connect the new device to the **multiprocessor network**;

use a data manager to identify a particular type of data used in the new device and processed with a first software application controlled and operated by the new device;

identify a second software application from among multiple different software applications located in a memory in the **multiprocessor network**, wherein the second software application is currently not loaded in or operated by any of the on-board processors, and the second software application is also configured to process the same particular type of data processed by the first software application controlled and operated by the new device;

using the data manager to select a particular one of the on-board processors for operating the second software application selected from the memory;

automatically move the second software application from the memory in the **multiprocessor network** to the particular one of the on-board processors selected by the data manager;

configure the particular one of the on-board processors to run the second software application moved from the memory, wherein running the second software application causes the particular one of the on-board processors to take over control and operation of the new device; and

initiate transfer of the data from the new device to the particular one of the on-board processors and initiate processing of the particular type of data received from the new device with the second software application running on the particular one of the on-board processors.

Claim 3:

The system of claim 1

wherein the multiprocessor network is configured to:

detect a first and second one of the new devices that generate streaming audio data;

disconnect the streaming audio data generated from the first one of the detected new devices currently connected the speakers; and

connect streaming audio data generated from the second one of the detected new devices to the speakers according to inputs received from a display coupled to the **multiprocessor network**.

Claim 5:

The system of claim 4 wherein at least a portion of content displayed on the display screen of one of the detected new devices is communicated to a display processor in the **multiprocessor network** for display and generation of information on a display processor display.

Claim 15:¹

The system of claim 1 wherein a display in the **multiprocessor network** includes a user interface that includes a touch screen.

Claim 16:

The system of claim 15 wherein the user interface initiates control operations carried out by one or more of the on-board processors in the **multiprocessor network**.

¹ Although claim 15 of the '739 patent is not asserted, claim 16 of that patent, which incorporates claim 15 by reference, is asserted.

Claim 18:

A method for configuring multiple processors within a vehicle, comprising:

operating the multiple processors in a multi-processor system, the multiprocessor system configured to:

monitor for wireless signals from a new device not currently coupled to the **multiprocessor system** and moved into the vehicle, wherein the new device runs a first software application that processes a first type of data;

wirelessly connect the new device to the **multiprocessor system**;

identify data codes in the wireless signals from the new device and use the data codes to identify the first type of data processed by the first software application running on the new device;

responsive to identifying the data codes from the new device, select a second software application from among multiple different software applications contained within memory in the **multiprocessor system**, wherein the second software application is configured to process the first type of data processed by the new device;

download a copy of the second software application selected from the memory to a first one of the multiple processors in the **multiprocessor system**, wherein the second software application is not currently loaded in the first one of the multiple processors;

reconfigure the first one of the multiple processors in the **multiprocessor system** to run the second software application downloaded from the memory and take over control and operation of the new device with the second software application now running on the first one of the multiple processors; and

processing data received from the new device with the second software application operating in and controlled by the first one of the multiple processors in the **multiprocessor system** in the vehicle.

U.S. Patent No. 7,793,136

Claim 1:

An application management system for a vehicle having multiple on-board processors, comprising:

one or more of the multiple on-board processors coupled together into a multiprocessor system and configured to:

operate a transceiver configured to detect a new device within communication range of the **multiprocessor system**;

detect a protocol used by the new device;

configure the multiprocessor system to communicate with the new device when the protocol conforms with a protocol used in the multiprocessor system;

identify a particular type of data used in the new device and processed with a first software application controlled and operated by the new device;

identify a second software application from among multiple different software applications located in a memory in the multiprocessor system, wherein the second software application is currently not loaded in or operated by the on-board processors in the multiprocessor system, and wherein the second software application is also configured to process the same particular type of data processed by the first software application controlled and operated by the new device;

select a particular one of the on-board processors for operating the second software application selected from the memory;

move the second software application from the memory in the multiprocessor system to the particular one of the on-board processors;

configure the particular one of the on-board processors to run the second software application moved from the memory, wherein running the second software application causes the particular one of the on-board processors to take over control and operation of the new device;

initiate transfer of the data from the new device to the particular one of the on-board processors and initiate processing of the particular type of data received from the new device with the second software application running on the particular one of the on-board processors; and

prevent at least one of an unauthorized device, unauthorized application, or unauthorized data from accessing at least some of the software applications in the multiprocessor system.

Claim 3:

The application management system of claim 1 wherein the multiprocessor system is configured to:

detect a first and second one of the new devices that generate streaming audio data;

disconnect the streaming audio data generated from the first one of the detected new devices currently connected to the speakers; and

connect streaming audio data generating from the second one of the detected new devices to the speakers according to the inputs received from a display coupled to the multiprocessor system.

Claim 5:

The application management system of claim 4 wherein at least a portion of content displayed on the display screen of the detected new device is communicated to a display processor in the **multiprocessor system** for display and generation of information on a display processor display.

*Claim 15:*²

The application management system of claim 1 wherein a display in the **multiprocessor system** includes a user interface that includes a touch screen.

Claim 16:

The application management system of claim 15 wherein the user interface initiates control operations carried out by one or more of the on-board processors in the **multiprocessor system**.

U.S. Patent No. 8,020,028

Claim 1:

An application management system for a multiprocessor system, comprising:

one or more processors coupled together into a multiprocessor system, wherein at least one of the processors in the multiprocessor system is configured to:

operate a transceiver configured to detect a new device within communication range of the **multiprocessor system**;

detect a protocol used by the new device; configure the multiprocessor system to communicate with the new device when the protocol conforms with a protocol used in the multiprocessor system;

identify a particular type of data used in the new device and processed with a first software application controlled and operated by the new device;

identify a second software application from among multiple different software applications located in a memory in the **multiprocessor system**, wherein the second software application is currently not loaded in or operated by any the on board processors in the **multiprocessor system**, and wherein the second software application is also configured to process the same particular type of data processed by the first software application controlled and operated by the new device;

download a copy of the second software application selected from the memory to one of the multiple processors in the **multiprocessor system**;

² Although claim 15 of the '136 patent is not asserted, claim 16 of that patent, which incorporates claim 15 by reference, is asserted.

configure said processor to run the second software application moved from the memory, wherein running the second software application causes said processor to take over control and operation of the new device;

initiate transfer of the data from the new device to said processor and initiate processing of the particular type of data received from the new device with the second software application running on said processor; and

prevent at least one of an unauthorized device, unauthorized application, or unauthorized data from accessing at least some of the software applications or data in the multiprocessor system.

Claim 3:

The application management system of claim 1 wherein the multiprocessor system is configured to:

detect a first and second one of the new devices that generate streaming audio data;

disconnect the streaming audio data generated from the first one of the detected new devices currently connected to the speakers; and

connect streaming audio data generating from the second one of the detected new devices to the speakers according to at least one of a priority level set in at least one of the processors and inputs received from a display coupled to the multiprocessor system.

Claim 5:

The application management system of claim 4 wherein at least a portion of content displayed on the display screen of the detected new device is communicated to a display processor in the multiprocessor system for display and generation of information on a display processor display.

Claim 15:

The application management system of claim 1 wherein a display in the multiprocessor system includes a user interface that includes a touch screen.

Claim 31:

A multiprocessor system, comprising:

multiple processors operating together as a multiprocessor system, wherein the multiprocessor system is a distributed processing system configured to:

identify a new device that is not currently coupled to the multiprocessor system,

connect the new device to the multiprocessor system when signaling from the new device conforms to a communication protocol used in the multiprocessor system,

configure the new device into the multiprocessor system.

identify data codes in the signaling from the new device identifying an application running on the new device, a data type used on the new device, and a security attribute associated with at least one of data stored in the new device and the application running on the new device,

use the identified security attribute to prevent at least one of an unauthorized applications and unauthorized data from being processed by the **multiprocessor system**,

identify at least one of a stored application in memory accessible by the **multiprocessor system**, wherein the application processes the same type of data processed by the new device,

responsive to identifying the stored application, download the stored application from memory into at least one processor in the **multiprocessor system**, and

use the application to process data received from the new device, and

select an appropriate human machine interface to output the data.

U.S. Patent No. 8,006,118

Claim 33:

An apparatus, comprising:

a multiprocessor system configured to:

monitor for a communication failure;

monitor for a request to either add a new device to the **multiprocessor system** or replace a connected device currently connected to the **multiprocessor system** with a new device, wherein the new device is currently not connected to the **multiprocessor system**; and

responsive to the communication failure or the request:

at least one of add the new device to the **multiprocessor system**, or remove the connected device from the **multiprocessor system** and add the new device to the **multiprocessor system**, and

initiate a reconfiguration process configured to terminate an application currently running in the **multiprocessor system**.

Claim 35:

The apparatus of claim 33, wherein the multiprocessor system is further configured to:

identify a security attribute associated with the new device;

identify the new device as an authorized new device or an unauthorized new device according to the security attribute; and

in response to identifying the new device as the unauthorized new device, prevent data from the new device from being processed by the multiprocessor system; and

in response to identifying the new device as the authorized new device:

identify a stored application in a memory accessible by the multiprocessor system, wherein the stored application processes a same data type used by the new device;

download the stored application from memory into the multiprocessor system; and

use the stored application to process data received from the new device.